

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

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Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte JAE-NAM KIM

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Appeal No. 2001-0259  
Application 08/725,762<sup>1</sup>

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ON BRIEF

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Before BARRETT, RUGGIERO, and BLANKENSHIP, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 11<sup>2</sup> and 13. Claims 1, 3-5, and 7-9 are indicated to be allowable.

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<sup>1</sup> Application for patent filed October 4, 1996, entitled "Speaker System Having an Amplifying Horn," which claims the foreign filing priority benefit under 35 U.S.C. § 119 of Republic of Korea Application 96-12218, filed April 22, 1996.

<sup>2</sup> Claim 11 was amended after the final rejection (Paper No. 8) to incorporate the limitations of dependent claim 12.



We affirm.

BACKGROUND

The invention relates to a speaker system which collects and amplifies sounds projected in the rearward direction of the speaker.

Claim 11 is reproduced below.

11. A speaker-horn arrangement for sound reproduction, comprising:

a speaker having a frame and a membrane affixed to the frame, said frame having openings in a rearward section thereof;

a horn having a sound collection section with a plurality of sound collecting openings, each of said sound collecting openings collecting sound from at least one of said openings of the frame, wherein said sound collection system is coupled to half the number of said openings in said speaker frame.

The examiner relies on the following reference:

Jung	5,206,465	April 27, 1993
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Claims 11 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Jung.

We refer to the final rejection (Paper No. 7) (pages referred to as "FR\_\_") and the examiner's answer (Paper No. 13) for a statement of the examiner's rejection, and to the brief (Paper No. 12) (pages referred to as "Br\_\_") and reply brief



(Paper No. 14) (pages referred to as "RBr\_\_") for a statement of appellant's arguments thereagainst.

OPINION

Since claim 12 was incorporated into independent claim 11 by the amendment after final rejection (Paper No. 8), the rejection of claims 11 and 13 is now over § 103(a) instead of § 102(b). Thus, we only consider appellant's arguments regarding Issue 4.

Jung discloses several embodiments of a sound collecting and concentrating device. In the first embodiment of figures 1-3, a plurality of sound collecting tubes 10 are attached to the speaker frame 1 with each sound collecting tube positioned directly concentric with one of the trapezoidal cut-outs in the frame. The outlet ends 12 of the sound collecting tube have horn attaching means 15, 16 (see figure 5) to permit attachment of a conventional horn (col. 5, lines 21-23). In the third embodiment of figures 8-1, 8-2, and 8-3, the sound collecting tube 51 having an integral horn has an inlet end 52 with four inlet segments 53a, 53b, 53c, and 53d, each defining a separate tube which combines with the tube 51, where each segment is attached over one or more of the trapezoidal cut-outs in the loudspeaker frame (col. 6, line 50 to col. 7, line 12). The first and third embodiments show the sound collecting tubes covering all of the trapezoidal cut-outs on the back area of the loudspeaker. However, Jung states that "the inlet end segment(s) concentric



[sic] cover some or all of the trapezoidal cut-outs which are shown in FIG. 3" (col. 6, lines 47-49). In the fifth embodiment of figures 10-1, 10-2, and 10-3, a sound collecting tube 70 with an integral horn 76 has a single inlet segment end 72 designed to shroud one half of the back area of the loudspeaker.

In claim 11, the limitation "wherein said sound collection section is coupled to half the number of said openings in said speaker frame" is subject to interpretation. While appellant argues as if the limitation means that the sound collection section is coupled to only half the number of frame openings, the limitation appears to be broad enough to read on coupling to all the frame openings because if the sound collection section is coupled to all the frame openings, it is also coupled to half the number of frame openings. Thus, it appears that claim 11 is broad enough to be anticipated by Jung. Nevertheless, we address appellant's argument that the sound collection section is coupled to only half the number of frame openings.

The difference between the first and third embodiments of Jung and the subject matter of claim 11 is that the sound collecting tubes in Jung are coupled to all of the frame openings, whereas, under the assumed claim interpretation, the sound collection section is coupled to only half the number of frame openings. The difference between the fifth embodiment of Jung and the subject matter of claim 11 is that a single sound



collecting tube in Jung is coupled to one-half the area of the loudspeaker, which is considered equivalent to half the number of openings where there are an even number of openings, whereas claim 11 recites a plurality of sound collecting openings.

The examiner (FR6) refers to column 6, lines 45-49 of Jung, which states, in part, that "the inlet end segment(s) concentric [sic] cover some or all of the trapezoidal cut-outs" (col. 6, lines 47-48), and the examiner concludes that since Jung does not limit the number of sound collecting sections, "it would have been obvious to one skilled in the art to provide any number for the sound collecting sections of the horn of Jung such as half the number of the openings of the frame for a choice of listeners preference" (FR6). That is, "some or all" describes any number of cut-outs, from one to all of the cut-outs.

Appellant argues that the examiner's statement is a "bald assertion" (Br10) without factual basis and that there is no motivation to make the suggested modification (Br10). It is argued that Jung discloses either a sound collecting horn with a plurality of inlet segments which cover all the openings in the frame of a speaker, or a single inlet opening which covers less than all the openings, but does not suggest a plurality of sound collecting openings connected to half the number of openings in the frame of the speaker (Br11).



These arguments do not address the examiner's finding that Jung teaches "the inlet end segment(s) concentric [sic] cover some or all of the trapezoidal cut-outs" (col. 6, lines 47-48) or the examiner's reasoning that "some" includes one half the number of cut-outs absent some teaching to the contrary.

Appellant addresses the examiner's argument about "some" in the reply brief. It is argued that there is no motivation to make the necessary changes and that figure 3 of Jung does not suggest a sound collection section coupled to one half the number of openings in the speaker frame (RBr2-3).

We agree with the examiner that Jung's statement that "the inlet end segment(s) concentric [sic] cover some or all of the trapezoidal cut-outs" (col. 6, lines 47-48) expressly suggests that plural segments in the first and third embodiments can cover "some or all" of the cut-outs and that "some" manifestly includes one half the number of cut-outs. The examiner has stated a prima facie case of obviousness as to claim 11 which has not been shown to be in error. In addition, even without the statement at column 6, it is our opinion that one of ordinary skill in the art would have been motivated by Jung's teaching in the fifth embodiment of a single inlet segment designed to shroud one half of the back area of the loudspeaker, to use one half of the four inlet segments in the third embodiment to shroud one half of the back area and, consequently, one half the number of cut-outs. In



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summary, there are three good reasons why claim 11 is unpatentable: (1) it is anticipated by the broad claim language which does not preclude attachment to all speaker cut-outs; (2) Jung teaches that segments can be coupled to "some or all" of the cut-outs, which suggests coupling to any number of cut-outs, including one half of the number of cut-outs; and (3) the teaching of covering half the speaker area with a single segment in the fifth embodiment would have suggested modifying the plural segment third embodiment to cover only half the cut-outs. Claim 13 has not been separately argued and, so, its patentability stands or falls together with that of claim 11. The rejection of claims 11 and 13 is sustained.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

LEE E. BARRETT	)	
Administrative Patent Judge	)	
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JOSEPH F. RUGGIERO	)	BOARD OF PATENT
Administrative Patent Judge	)	APPEALS
	)	AND



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	)	INTERFERENCES
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HOWARD B. BLANKENSHIP	)	
Administrative Patent Judge	)	



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SUGHRUE, MION, ZINN, MacPEAK & SEAS  
2100 PENNSYLVANIA AVENUE, N.W.  
WASHINGTON, DC 20037-3202